REMARKS

This amendment, submitted in response to the Office Action dated June 20, 2003, is believed to be fully responsive to each point of rejection raised therein. Accordingly, favorable reconsideration is respectfully requested.

Claims 1-8 are pending in the application. The Examiner has rejected claims 1, 2, 5 and 6 under 35 U.S.C. § 102(e) as being anticipated by Yamaguchi et al (USP 5,818,527). The Examiner has objected to claims 3, 4, 7 and 8 but has indicated they would be allowed if rewritten in independent form. Applicant submits the following in traversal of the rejection.

In an exemplary embodiment of the present invention, a CCD receives light formed from the surface of a lens. The image formed by the lens is affected by distortion aberration of the lens. Signals representing the image of the light that are generated by the CCD are transferred to a first frame memory. A different memory stores the distortion aberration characteristics of the lens. A second frame memory stores information on a distortion-corrected image from which distortions due to the distortion aberration of the lens are eliminated.

In addition, an image position correction unit obtains a position in the first frame memory corresponding to each pixel of the distortion-corrected image in the second frame memory. A brightness correction unit calculates a brightness of the position in the first frame memory based on the brightness values of nearby pixels. The corrected brightness is then stored in the second frame memory. Therefore, the distortion corrected image obtained in the second memory is not affected by the distortion aberration of a lens.

Yamaguchi pertains to an image processor for correcting distortion of the central portion of an image captured by an optical system and preventing the marginal portion of the image from

protruding. Column 1, lines 9-12. In Yamaguchi, a CCD picks up an uncorrected distorted image. Corrected data predetermined for each portion of the image pickup surface of the CCD is stored in a correction ROM 13a21a for correcting a central area of an image, and a ROM 13b21b for correcting a marginal area of an image. Column 5, lines 65-67. The ROM's correct distortion by changing the read addresses. Column 6, lines 24-48.

Claim 5

The Examiner maintains ROM13B stores distortion aberration characteristics of the lens where the distortion aberration characteristics indicate distortion at respective distances from an optical axis on the image surface. The ROM 13B stores corrected address data of the image, and not of the lens. Address data read out of the ROM 13B is applied to an address end of the image memory 5 as a corrected address and a picture element of a memory cell corresponding to the address is read. Therefore, ROM 13B stores a read image and not aberration distortion characteristics of a lens as indicated by the Examiner. Column 7, lines 33-51.

Assuming *arguendo* ROM 13B stores aberration characteristics of a lens, Yamaguchi does not disclose a distorted position determining unit as described in the present invention. The Examiner maintains a distorted position determining unit is disclosed in column 8, lines 12-28 and lines 49-56. However, the respective column and lines cited by the Examiner describe the operation of the processor 30B. It is unclear how the apparatus for correcting influences of distortion aberration of a lens 30B would consist of an apparatus for correcting influences of distortion aberration of a lens 30B. Therefore, it appears the Examiner's circular reasoning is a result of hindsight upon viewing the Applicant's invention.

Furthermore, it does not appear that any particular structural element of Yamaguchi teaches the distorted position determining unit of the present invention, as distinguished from the aberration storing unit. The Examiner appears to acknowledge this which is why no particular structure was cited (as opposed to ROM 13B which was cited for teaching a distortion aberration characteristic storing unit and interpolation unit 6 which was cited for teaching a position dependent information obtaining unit).

The Examiner further maintains that Yamaguchi discloses a position dependent information obtaining unit for obtaining at least one kind of image information belonging to the predetermined position based on distortion aberration characteristics. However, it does not appear that Yamaguchi obtains density or luminance information as described in the present invention. In particular, the respective column and lines cited by the Examiner describe an image signal on an image area is output to the interpolation circuit 6 so that image information does not protrude to the outside of the image area. Column 9, lines 48-51. Nothing is indicated about correcting density or luminance based on predetermined positions as related to aberration. Moreover, since Yamaguchi relies on re-timing of address read out to correct for aberration, image information belonging to predetermined positions need not further be obtained.

The Examiner additionally cited column 25, lines 28-35 in support. The respective column and lines cited by the Examiner describe decreasing the luminance and brightness of an image at a marginal portion. There is no indication that the interpolation unit 6 obtains the brightness and luminance information based on the distortion aberration characteristics of the lens, and at predetermined positions.

For the above reasons, claim 5 should be deemed patentable. Since claim 1 describes similar features, it should be patentable for the same reasons.

Claim 6

With respect to claim 6, it appears that the Examiner meant to refer to claim 6, although the Examiner indicated claim 5 on page 3 of the Office Action. The Examiner maintains Yamaguchi discloses one kind of image information belonging to each position may be one of a density or brightness value of each pixel of the image and other various signals belonging to each pixel of the image, citing column 9, lines 49-55 and column 25, lines 28-35 in support.

As previously indicated, nothing in column 9, lines 49-55 indicates the correction of density or luminance as indicated by the Examiner. Column 25, lines 28-35 describes clarifying the boundary between the marginal and central portion of the image. It also decreases the luminance or brightness of the image at the marginal portion. Therefore, at most luminance and brightness of a boundary or marginal area is obtained, and not image information belonging to each pixel of an image.

Therefore, claim 6 should be deemed patentable. Since claim 2 describes similar features, it is patentable for the same reason.

Claim 1

The Examiner maintains the same arguments with respect to claim 1, as that which was maintained with respect to claim 5. However, claim 1 describes distortions and at least one kind of image information belonging to each position of the image are corrected according to a distortion aberration characteristic of the lens, which was not described in claim 5.

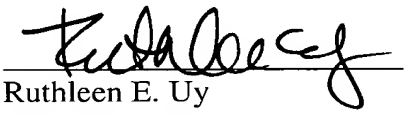
Therefore, the Examiner has not established that Kobayashi discloses correcting at least one kind of image information belonging to each position of the image. For at least this reason, any subsequent office action should be made on a non-final basis.

Finally, Applicant has added claims 9-15 to provide a more varied scope of protection for the present invention.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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